ANDROMEDA SYSTEMS INC.

PRTC11 PROGRAMMABLE REAL TIME CLOCK
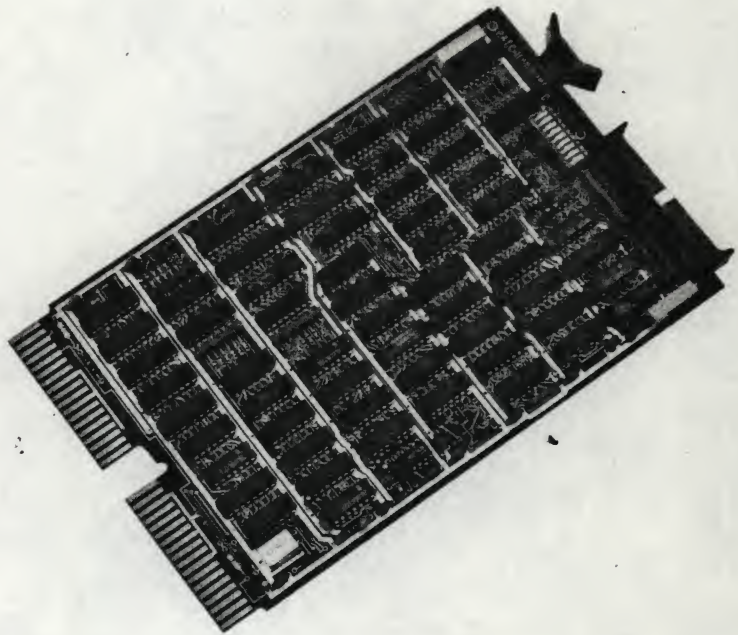
LSI-11™ COMPATIBLE

FEATURES

- FUNCTIONAL SUPERSET OF DEC™ KWV11-A
- 13 INTERNALLY GENERATED TIMING RATES
- 5 OPERATIONAL MODES
- 2 SCHMITT TRIGGER INPUTS
- 2 VECTORED INTERRUPTS
- ENTIRE CLOCK FITS ON A DUAL WIDTH CARD
- USES STANDARD VOLTAGES (+5, +12)
- PLUGS INTO LSI-11 BACKPLANE

DESCRIPTION

The PRTC11 is a programmable timer/counter that provides several ways of generating or measuring time intervals, counting events, and determining the frequency of a signal. It can interrupt the LSI-11 CPU at programmed intervals or upon the receipt of an external input. The PRTC11 can also be used to initiate external functions such as conversions by the ADC11 analog to digital converter. The PRTC11 is a functional superset of the DEC KWV11-A. The extra timing rates and operational mode of the PRTC11 are enabled by a switch on the card.

The PRTC11 contains a 16 bit counter that can be incremented at 13 internally generated, crystal controlled, rates. The LSI-11 line clock (BEVENT L) and one of the schmitt trigger channels may also be used to increment the counter. Five operational modes are available in the PRTC11: single programmable interval, repeated programmable interval, event timing (internal or external), event interval timing, and frequency counting. Simple event counting is also available via frequency counting with an indefinite interval.

The PRTC11 provides the user with two schmitt trigger channels. On-board slope and trigger level controls are included (remote control is possible via the I/O connector). The schmitt triggers are used for external event detection, external timebase input, and external frequency input. The schmitt trigger outputs are also available for controlling external functions.

The entire PRTC11 is contained on a dual width card which plugs into the Q-BUS (LSI-11 backplane). Only +5 and +12 volts, the standard LSI-11 voltages, are required. -12 volts is generated on the card for the schmitt triggers. External connections are made via a 40 pin flat cable connector (same pinning as KWV11-A). PIN connectors allow simple connection of schmitt trigger 1 and clock overflow outputs to the ADC11. Jumpers permit user selection of the device address and interrupt vectors. A switch pack allows the user to enable the extra timing rates and frequency count mode as well as control the trigger level and slope of the schmitt triggers. Two trimpots permit on-board setting of the schmitt trigger levels.

The 13 internally generated timing rates are: 1MHz, 100kHz, 10kHz, 1kHz, 100Hz, 10Hz*, 1Hz*, .1Hz*, .01Hz*, .01667Hz* (1 min.), .001667 Hz* (10 min.), .0002778Hz* (1 hour), and 50Hz*.

*These rates are not available with the DEC KWV11-A.

SPECIFICATIONS

Compatability: Superset of KWV11-A (extra rates and mode enabled via on-board switch)

Power Requirements: .7A at 5VDC (TYP)
                      .07A at 12VDC (TYP)

LSI-11 Bus Interface: 2 Registers:

• Command/Status

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
ST2 Flag		ST2 GO ENA		DIO				CLK OV Flag		C	RATE B	A	MODE B	A	GO

ST2 Interrupt Enable

Flag Overrun   Maint Osc   Maint ST2   Maint ST1   Clock Overflow Interrupt Enable

(Options Enabled)

| 11 RATE D | 10 MODE C |

Clock Overflow Interrupt Enable

• Buffer/Preset

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
PRESET OR COUNT DATA															

Interrupts: 2, individually vectored:

  • Clock Overflow
  • Schmitt Trigger 2 Event

CB11-B CONNECTOR BOX

An optional connector box, the CB11-B is available. The CB11-B provides a convenient method of connecting a variety of external devices to the PRTC11. BNC connectors are provided for schmitt trigger inputs, enable inputs, level outputs, and pulse outputs. The clock overflow output is also available as are remote slope and level controls for both schmitt triggers. The CB11-B connects to the PRTC11 40 pin external connector via an optional cable.

The CB11-B may be rack mounted (3½" H) or free stand on a table top.

CB11-B Connector Box (Back View).

TO ORDER

PRTC11:   Programmable Real Time Clock
CB11-B: Connector Box
LABEX2:   Driver software for PRTC11

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